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AUTHOR	Cope, Robert G.
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ABSTRACT

Patterns that emerged from reviewing four syllabi for courses on management information systems are discussed. These courses are offered as part of graduate level studies in the field of higher education administration. A proposed outline for a syllabus is also provided. Courses addressing the information requirements for colleges and universities offer a range of content from a focus on computer technology to a focus on the information useful for various management decisions. It is recommended that information systems be studied as part of a course emphasizing information as it relates to decision-making requirements. The uses of information are considered: information for day-to-day operations, information for control or for managing and guiding the institution, and information for strategic purposes (i.e., adjusting to new situations). The proposed syllabus covers educational objectives, content, possible activities/field projects, and reading materials for the course. Generally, the student is expected to develop an integrated knowledge of information and decision support systems, and understand how these relate to institutional governance, management, and leadership. Students should have some familiarity with: the organization, structure, and finance of colleges and basic research design and statistical methods. A list of members of the course syllabi network is included. (SW)

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MANAGEMENT INFORMATION SYSTEMS

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MANAGEMENT INFORMATION SYSTEMS

Robert G. Cope
University of Washington
M219 Miller Hall
DQ-12
Seattle, WA 98195
(206) 543-1836

ASSOCIATION FOR THE STUDY OF HIGHER EDUCATION
COURSE SYLLABI PROJECT:
MANAGEMENT INFORMATION SYSTEMS

Prepared by Robert G. Cope
Associate Professor of Policy,
Governance and Administration
University of Washington

Part I

Introduction

Courses addressing the information requirements for colleges and universities offer a range of content from a focus on computer technology to a focus on the information useful for various management decisions. Elements from the full range (hardware to information for decisions) were in the four syllabi reviewed. None of the syllabi, however, were for complete courses designed specifically for a study of information systems in higher education. Among syllabi examined, "informations systems," was usually included as a part of a course on institutional research or a course on decision-making or a course on the management and organization of colleges and universities.

Following the practice in the field at the present time, I too do not recommend a separate course on management information systems. I do recommend "information systems" as part of a course emphasizing information as it relates to decision-making requirements.

Information Requirements for Decision-making

With the widespread introduction of organizational behavior and strategic/contextual management concepts in higher educational curricula in the 1980's, an additional perspective on information requirements became evident. The "technically oriented" information requirements of the 70's needed supplimentation by "managerially oriented" systems. What this means exactly is still unclear, however, it is clear that the new information available to colleges and universities will cost less, is simplified, and is more directly related to the long-term success of the institution (See Cope, 1985; Rockart, 1983; and Sullivan, 1985).

Most information systems, whether computerized or not, have been designed for operating purposes (e.g., paying bills and collecting funds); and control purposes (e.g., meeting affirmative action guidelines, determining unit costs); and to provide internal, historical information. Strategic choices, and the information required for assessing organizational behavior, require information largely in the form of intelligence about future external conditions, as well as opinions about the current conditions.

The information that is largely the subject of this syllabus, following Anthony's (1965) influential framework, serves three institutional purposes: operational, control, and contextual/strategic. The deficiencies now appear greatest at the contextual/strategic level. That is where planning capabilities are least developed because, as Heydinger (1983) has observed, college and university planning has developed through four stages: (1) Budget Planning first, then (2) Goals and Objectives Planning, then (3) to Forecasting, and finally (4) Strategic Planning. As each form of planning was adopted, appropriate supporting information systems developed.

Operational information is maintained on a day-to-day basis in order to record and assure performance. As a highly accurate and detailed record of the past and present about students, expenditures, facilities, and so on, it has almost no strategic value. Operational information is gathered as unfocused by-products of operating system requirements. Reports from the operating system are essentially spin-offs from a system designed to perform routine, bottom-up, paperwork processing. This is the heart of a Management Information System (MIS) but is not adequate for a Decision Support System (DSS) as recommended later.

Information for the purposes of guidance and control involves year-to-year tactical decisions about the deployment of resources and their effective and efficient application. Here the issues are new staff positions, new or modified programs, assesent of affirmative action achievements, studies of student progress, and so on.

Information for strategic purposes aids in the delineation of alternative courses of direction are three to ten years in the future. Strategy determines the nature and direction of the institution. Strategic choices relate to the scope of services, choice of those served, growth considerations, and the nature of relationahips with other organizations. Strategic choices are about "what" in the "what/how" separation. Strategic/contextual information is in the form of unstructured "intelligence." Intelligence is future-oriented, quickly assembled, subjective, often delivered word-of-mouth from creditable sources. I am inclined to believe all technology-based information will be useless for strategy.

Therefore, operational information is for maintenance; information for control is for managing and guiding the institution; information for strategic purposes is for adjusting to developing new contextual situations. These three "levels" together approximate the Decision Support System (DSS) as described by Hackman and Libby (1981) rather than a Management Information System (MIS) as described, for example, by Bocchino (1972) and Long (1983). DSS recognizes the importance of the different kinds of information required for different purposes described in 1965 by Anthony: operations, control, and strategic.

References for Part I:

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Bocchino, William A. Management Information Systems. Prentice Hall, 1972

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Heydinger, R. B. "Using External Information in Planning: Some Tools for Expanding Our Vision and Enhancing Our Strategic Thinking." Paper presented at the Conference on Academic Renewal, Ann Arbor, Center for the Study of Higher Education, University of Michigan, June 12-14, 1983.

Long, Larry E. Manager's Guide to Computers and Information Systems. Englewood, NJ: Prentice-Hall, Inc., 1983.

Rockart, J. F. "The Changing Role of the Information Systems Executive: A Critical Success Factors Perspective." Sloan Management Review, Fall, 1983, 15-25.

Sullivan, C. H. "Systems Planning in the Information Age." Sloan Management Review, Winter 1985, 3-12.

Part II

PROPOSED SYLLABUS: AN OUTLINE OF PURPOSES, CONTENT AND RESOURCES.

Purposes

Generally, the student should develop an integrated knowledge of information (MIS) and decision support systems (DSS) and understand how these relate to institutional governance, management and leadership.

Technical proficiency is not considered achievable nor desirable. The following content assumes no specific prerequisites, however, students probably should have some familiarity with most of the following: the organization, structure and finance of higher educational institutions, and basic research design and statistical methods.

Given these understandings, these are recommended purposes:

To develop a knowledge base which relates information systems analysis techniques to operations, management and policy analysis.

To examine the information requirements, the organizational role, and knowledge utilization processes of decision-makers.

To review the rapidly changing information requirements and decision support systems useful in college and universities.

To develop a knowledge of computerized information sources and demonstrate an ability to gain access to them.

To demonstrate the ability to select computer resources to meet governance and management information needs.

To develop skill in designing, critiquing, or administering an institution's operational, management, and strategic/policy planning functions.

To demonstrate an understanding of the ethics and privacy issues of information system applications.

Content

Information system developments. Research findings related to initiating and using MIS and DSS.

Mainframe and microcomputer developments related to time-sharing, literature searching capability, remote data access, and computer networks.

Interdependence between institutional research, planning, instructional, administrative and policy uses of electronic technology.

Possible Activities/Field Projects

Analyze and critique an institution's information system.

Design an information system for an institution.

Write a literature and research-based paper for submission to a professional journal or conference program.

Field trip to a nearby institution to study its information system(s).

Invited panel of experts on developments in computer technology including artificial intelligence (AI), Knowledge Information Processing System (KIPS, a fifth generation development, largely in Japan), and emerging development of fuzzy data.

Higher Education Associations/Publications

Association for Institutional Research (AIR)
- AIR Newsletter
- New Directions for Institutional Research Series(Jossey-Bass)
- Proceedings of Annual Forums
- Professional File series

College and University Systems Exchange (CAUSE)

Computers, Environment and Urban Systems

Journal of Data Management

National Association of College and University Business Officers (NACUBO)

National Center for Higher Education Management Systems (NCHEMS)

MIS Quarterly

Society for College and University Planning (SCUP)
- Planning for Higher Education

Bibliography

Potential readings recommended in addition to the newsletters and publications included in Part I:

Arns. R. G. and F. A. Curran. "Information System Requirements for Strategic Planning and Implementaion." Paper presented at the CAUSE National Conference, Hilton Head Island, South Carolina, December 1982.

Cleveland, H., "twighlight of Hierarchy: Speculations on the Global Information Society," Public Administration Review, January-February 1985.

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Van Horn, R. "Academic Computing - How Much is Enough? - Revisited," Proceedings of the Fifteenth Annual Seminar on Academic Computing Services, Snowmass, Colorado, 1985.

Wyatt, J. B., James Emery and Carolyn Landis, eds., Financial Planning Models: Concepts and Case Studies in Colleqes and Universities. Princeton, N.J.: EDUCOM, the Interuniversity Communications Council, Inc., 1979.

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ASHE ERIC

Clearinghouse for Course Syllabi in Higher Education

A group of Association for the Study of Higher Education (ASHE) members are forming a national higher education network for course syllabli. (See box.) The activity, sponsored by ASHE's Committee on Curriculum, Instruction and Learning, promises to be of great benefit to new and experienced teachers in higher education.

If you wish to participate, please send your latest course syllabi to the appropriate members of the network today. These individuals have committed their time and effort toward the following:

- syntheses reviewing course syllabi received with an evaluation of what is happening in each area (e.g., course titles, emphases, major works and resources in use, syllabi,models, trends, observations), along with a few exemplary syllabi to be made available via the ERIC Clearinghouse on Higher Education by the end of 1985
- abstracts for inclusion in an essay on "Course Syllabi as Instructional Resources," to appear in the 1986 edition of ASHE's Instructional Resources Handbook for Higher Education
- updates of the essay/abstract in four years.

NETWORK MEMBERS

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Management Information Systems	Robert G. Cope, Univ. of Washington, M219 Miller Hall, DQ-12, Seattle, WA 98195
Organization/Administration	Ellen Earle Chaffee, Board of Higher Education, Capitol Bldg., 19th Floor, Bismarck, ND 58505
Public Policy	Jack H. Schuster, Claremont Graduate School, Higher Ed. Program, Claremont, CA 91711
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Student Personnel Administration/ Counseling/Human Development	Larry H. Ebbers, N244 Quadrangle, Iowa State Univ., Ames, IA 50011
Teacher Education	Jack Hruska, Univ. of Massachusetts, School of Education, Amherst, MA 01003
Vocational/Technical	Clyde Ginn, Univ. of Southern Mississippi, Box 5177, Southern Sta., Hattiesburg, MS 39406

To establish a viable clearinghouse, your help is needed. Please flood members of the network with your course syllabi and suggestions. Help establish a higher education clearinghouse for course syllabi.